

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-025214**Date Inspected:** 13-Jul-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) Process.

**A). Pipe Welds**

The QAI observed the continued CJP Welding of the 2.5" domestic water and 4.0" compressed air line systems field splices along gridline W5 at Orthotropic Box Girder (OBG) W1. The welding was performed by Rick Kiikvee ID-5319 utilizing the SMAW process as per the WPS identified as 1-12-1.

The QAI also observed the installation and fit-up of the pipe supports identified as PS-5 which were located along the E5 gridline of the OBG identified as W12. The tack welding and field welding was performed by David Garcia ID-8789 utilizing a 3.2 mm electrode as per the Welding Procedure Specification (WPS) identified as Fillet Murex. The fillet welding was performed in the vertical (3F) and overhead (4F) position. The inspection was performed by the QC inspector, Steve Jensen, utilizing the WPS's to monitor the welding and to verify the amperage. The welding and inspection of the pipe field splices and pipe supports was not completed during this shift. This work was performed by the sub-contractor F.W. Spencer.

**B). OBG 11E/12E**

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The QAI observed the continued CJP welding of the edge plate field splice identified as Weld Number (WN): 11E-12E-F1. The welding was performed by Wen Han Yu ID-6317 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1040A, Rev. 1. The WPS was also utilized by the QC Inspector Fred Von Hoff as a reference during the monitoring of the welding and the verification of the welding parameters. The in process welding and inspection appeared to comply with the contract specifications.

### C). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes located on the west orthotropic box girders identified as WN: 9E-PP88-E4-W2 and 4. The welding was performed by Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0. The QAI also observed the QC inspector's perform the visual inspection and verify the welding parameters during the production welding. The inspections performed by Fred Von Hoff appeared to comply with the contract specifications. The welding of the lifting lug holes was not completed during this scheduled shift.

### D). OBG E6/E7

The QAI informed the QC Supervisor Leonard Cross that at this field splice, segment A1, there appeared to be underfill of approximately 21 mm in length and approximately 2.5 mm deep. The QAI requested a QC evaluation of this area and also requested QC to contact this QAI at the conclusion of the QC evaluation and interpretation of this area. Later in the shift the QC inspector informed this QAI that this area also exhibited a toe crack and informed WQCP, James Bowers of this issue. Further investigation will commence on Thursday morning, July 14, 2011.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

### QA Summary

The welding was performed in the flat and horizontal positions utilizing the low hydrogen H4R electrodes. The 3.2 mm and electrodes were stored in electrically heated, thermostatically controlled oven after the removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

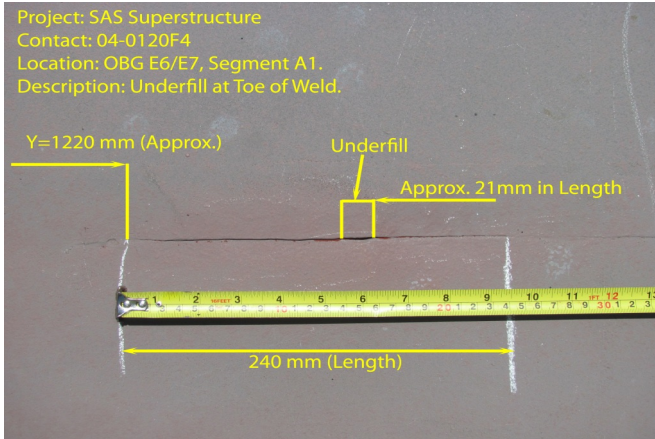
The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled work date.

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## Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Reyes, Danny

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer